IN THE CLAIMS:

1-55. Canceled

56. (Original) In the fabrication of crystallized silicon films, a method for planarizing a surface as crystal grains are laterally grown, the method comprising:

forming a film of amorphous silicon with a surface and a plurality of areas;

irradiating an area of the silicon film with a first laser pulse;

in response to the first laser pulse, melting the silicon film;

waiting for the silicon film to solidify;

irradiating the area of the silicon film with a second laser pulse; and,

in response to the second laser pulse, melting the silicon film surface.

57. (Original) The method of claim 56 wherein waiting for the silicon film to solidify includes separating the first pulse from the second pulse with a temporal separation in the range from 30 to 500 nanoseconds (ns).

58. (Original) The method of claim 56 wherein irradiating with a first pulse and a second pulse includes forming first and second pulses having a pulse width in the range of 20 to 100 ns, as measured at their full-width-half-maximum.

59. (Original) The method of claim 56 wherein irradiating with a first pulse includes irradiating with a first pulse having a first intensity; and,

wherein irradiating with a second pulse includes irradiating with a second pulse having a second intensity equal to the first intensity.

60. (Original) The method of claim 56 wherein irradiating with a first pulse includes irradiating with a first pulse having a first intensity; and,

wherein irradiating with a second pulse includes irradiating with a second pulse having a second intensity different than the first intensity.

61. (Original) The method of claim 60 wherein irradiating with a second pulse includes irradiating with a second pulse having a second intensity less than the first intensity.

62. (Original) The method of claim 61 wherein irradiating with a second pulse includes irradiating with a second pulse having a second intensity in the range of 0.1 to 0.8 of the first intensity.

63. (Original) The method of claim 62 wherein irradiating with a first pulse and a second pulse includes forming first and second pulses having a first pulse width, as measured at their full-width-half-maximum; and,

wherein waiting for the silicon film to solidify includes creating a separation between pulses that is greater than the first pulse width.

64. (Original) The method of claim 61 wherein irradiating with a second pulse includes irradiating with a second pulse having a second intensity in the range of 0.5 to 0.9 of the first intensity.

65. (Original) The method of claim 64 wherein irradiating with a first pulse and a second pulse includes forming first and second pulses having a first pulse width, as measured at their full-width-half-maximum; and,

wherein waiting for the silicon film to solidify includes creating a separation between pulses that is less than the first pulse width.

66. (Original) The method of claim 56 wherein forming a film of amorphous silicon with a surface and a plurality of areas includes forming a silicon film having a thickness in the range of 100 to 1000 Å.

67. (Original) The method of claim 56 wherein irradiating with the first and second pulses includes irradiating with a laser wavelength of less than 550 nanometers.

68. (Original) The method of claim 56 wherein melting the silicon film surface in response to the second laser pulse includes controlling the silicon surface flatness within a range of 50 to 500 Å.

69. (Original) The method of claim 56 wherein melting the silicon film surface in response to the second laser pulse includes controlling the silicon surface flatness within a range of 50 to 200 Å.

70. (Original) The method of claim 56 wherein irradiating an area of the silicon film with a first laser pulse includes irradiating an area having a first length equal to the beam width; and,

wherein melting the silicon film in response to the first laser pulse includes laterally growing crystal grains by a length equal to approximately one-half the first length.

71-75. Canceled